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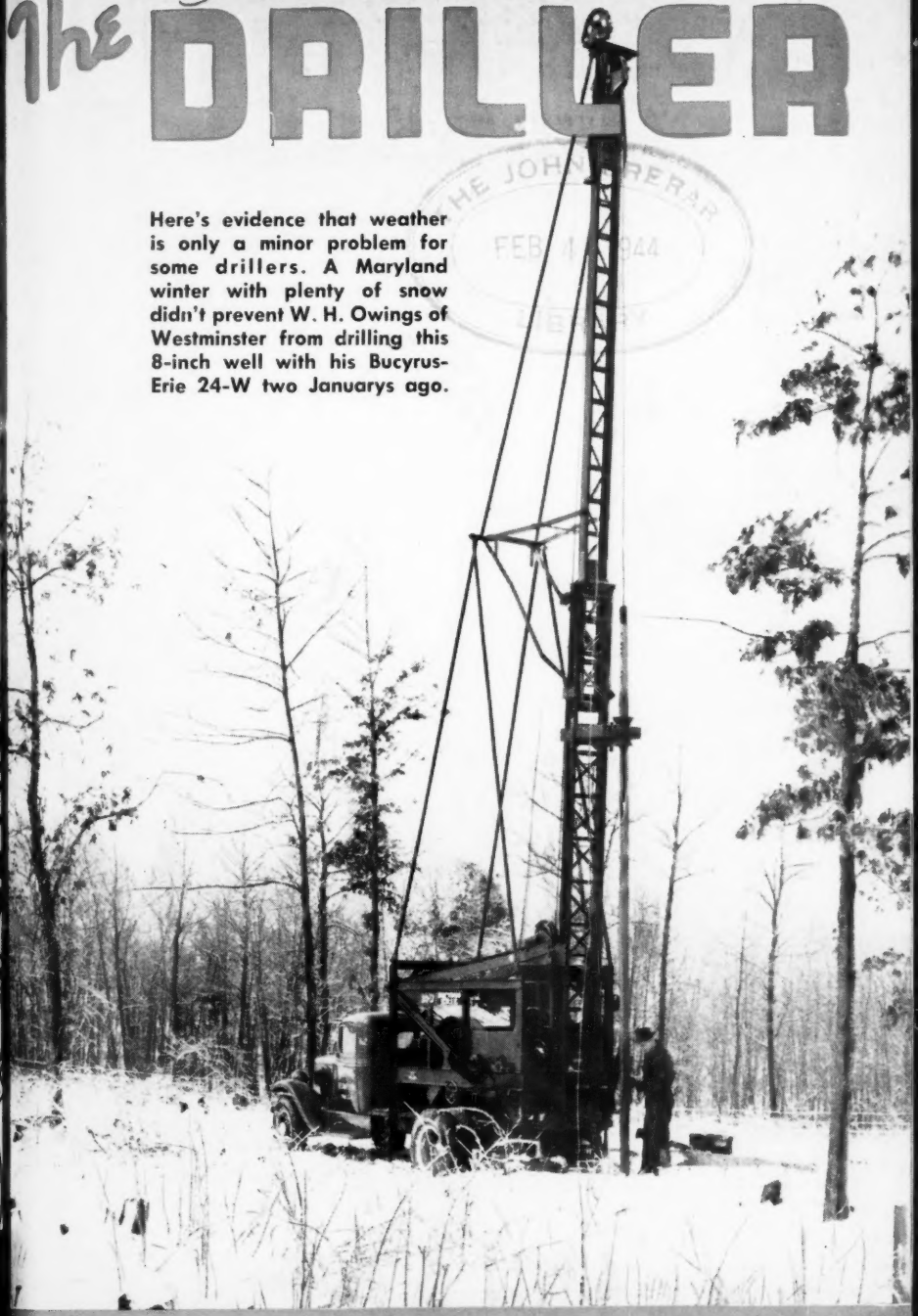
The DRILLER

THE JOHN CRERAR
FEB 1944
LIBRARY

Here's evidence that weather is only a minor problem for some drillers. A Maryland winter with plenty of snow didn't prevent W. H. Owings of Westminster from drilling this 8-inch well with his Bucyrus-Erie 24-W two Januarys ago.



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VOLUME 18 FEBRUARY, 1944 NUMBER 2

It's Not Over Yet!

BUCYRUS ERIE

KEEP YOUR DRILL LUBRICATED *to Last*

Yes, we're winning the War. But the job still far from completed. This means that indefinite period still remains in which we got to make present equipment last. Y can go a long way in helping your wa well drill "stick it out" by keeping it lub cated regularly according to your dr manufacturer's instructions. Here are a f points to watch:

1. Bearings on crown sheave and sand sheave should be lubricated once each
2. On modern machines, lubricate ball or ler bearings on jackshaft and engine p shaft with small amounts about once week. Don't use graphite grease. On machines with plain bearings, lubricate d
3. Even when your drill is not being mo keep mounting lubricated against we motion developed in drilling.
4. Lubricate wire lines to prolong their
5. Be sure to lubricate spudding pinion bull reel pinion once each shift.
6. Don't overlook sand reel shaft bearings operating lever connections — they sh be lubricated once each shift.
7. Get complete lubrication instructions your drill manufacturer and follow carefully.

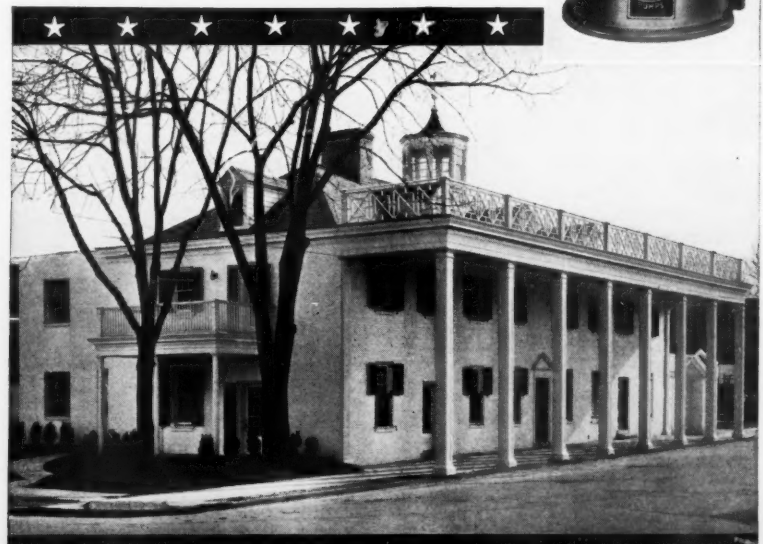
KEEP 'EM DRILLING

BUCYRUS · ERIE CO·

South Milwaukee, Wis., Englewood, N. J.
Evansville, Ind.
J. E. Armstrong Sales Company, Waterloo, Iowa
The Kaufman Company, Los Angeles, California

LITTLE AND BIG STORIES BEHIND COOK INSTALLATIONS

MOUNT VERNON FARM, an estate of 1400 acres in the Kanawha Valley, West Virginia, at one time belonged to George Washington, the Father of Our Country. The Manor house and spacious barns, vegetable gardens and grain fields, Jersey and Holstein cattle, Percheron and Belgian horses are the realized dream of the present owner, Mr. H. E. Shadle, who was born on February 22nd, hence copy of Mount Vernon.



For ten years a COOK Deep-Well Turbine Pump has been in constant service seven days a week.

GENUINE COOK WELL SUPPLIES

A. D. COOK, Inc.

Outfitters for Wells

LAWRENCEBURG, INDIANA

DEEP-WELL COOK PUMPS

• A symbol of planning being done by this company is this architect's drawing of a new office building to be constructed after the war.

Chicago Company Plans for Postwar

Used to big jobs and a full working schedule, this company, located in a Chicago suburb, doesn't let its expanded wartime program prevent planning for the return of peace. Company officials realize the progress which inevitably results from foresight, and are bending all efforts to make the postwar period "right" for their company.

"THE well-drilling profession"—these words are probably seldom so well illustrated as they are by Wm. A. 'Mac' McEllhiney, President of the J. P. Miller Artesian Well Co. of Brookfield, Illinois, and a truly professional man. As a graduate engineer he knows machines; to this add a thorough knowledge of drilling methods, geology, water systems, selling, business, and you have a general picture of the leader of one of the foremost drilling firms of the Middle West.

The professional approach is especially apparent in his and his company's postwar plans, for despite a full schedule, they are spending many hours laying plans to make the return of peace a time of expansion for the J. P. Miller Artesian Well Co.

Prominent in the plans is a systematic lining up of good prospects, creating a backlog that promises to plunge the company into peacetime drilling of even greater proportions than their present crowded program. To help meet the anticipated postwar demand for wells, the company is also planning to add to its equipment.

A fleet of ten modern drilling rigs, twelve test-pumping units, a complete stock of drilling and fishing tools—to give just an idea of the firm's inventory—would appear to be equipment enough for almost any drilling company. To this array, however, the J. P. Miller Co. expects to add new rigs, pumps, tools, etc., in order to keep up with the postwar demand which they foresee.

Postwar expansion is expected to be apparent in the number of employees, too. The normal complement now is between 30 and 40, but McEllhiney indicates that it will be greater when peace returns.

Besides a genuine profession, well drilling is big business with the J. P. Miller Co. too, for McEllhiney describes the firm's territory as "about as far as you can tow drilling rigs," or "any place in America where there is rock drilling." More specifically, the company tries to operate within a five-hundred-mile radius of Chicago, although Miller wells have been drilled in such distant points as New York, Tennessee, Nebraska, and Texas.

Municipal, state, industrial, and air-conditioning wells are Miller specialties. They try to avoid home and farm wells, leaving this type of work to drillers who specialize in it. They receive frequent calls to drill such wells, but these inquiries are usually referred to other drillers.

Normally, air-conditioning wells are one of the company's big items. Wartime restrictions have almost eliminated this type of well, but in the postwar period it promises to be one of their more important types again.

Wells for war-important industries have more than balanced the decrease in air-conditioning wells. In recent months, this firm has done work for such industries as Inland Steel, Chicago; American Manganese Steel, Chicago Heights; Chicago Bridge and Iron, Seneca; Carnegie-Illinois Steel, Joliet; and the Central Process Company, River Forest. Other recent Miller jobs have been done for the City of Seneca; Fournier Institute, Lemont; St. Mary's Training School, Des Plaines; Bunte Candy Co., Chicago, and the Lewis Tar Products Company, Brookfield.

Miller wells range in diameter

J. P. MILLER ARTESIAN WELL COMPANY

Executive Officers

WILLIAM A. McELLHINEY, President
M. O. NELSON, Vice-President
HELEN TAUBE, Secretary and Treasurer
WILLIAM SHOOK, Field Superintendent

Equipment

3 Bucyrus-Erie 36-L Spudders
1 Bucyrus-Erie 44-L Spudder
1 Bucyrus-Erie 24-L Spudder
1 Bucyrus-Erie 33-W Well Drill
2 Bucyrus-Erie 29-W Well Drills
1 Armstrong 35 Well Drill
1 Star 28 Well Drill
1 Buhl Air Compressor
1 Baker Core Barrel
Test-Boring Equipment, including power hoist and tripod
12 Test-pumping units up to 200 HP, with 400-500 ft. settings. (Units arranged for gasoline engine with right-angle gear drive, electric motor drive, and belt drive.)

• President of the firm, energetic William A. McEllhiney is snapped outside the company's present office building.

• This close-up of casing pulled from a Chicago well shows holes eaten into the pipe by the corrosive action of the water.

from 3 inches to 30 inches, in depth from 300 to 2300 feet. The latter figure represents the normal maximum depth, a specific example of which is the 2300-foot municipal well at Batavia, Illinois.

A large part of the company's work is repair work, especially now. Commenting on this fact, McEllhiney says, "At the present time, about 60 percent of our work is repair and maintenance of existing water facilities, and the remaining 40 percent is new well construction. These percentages, however, do not remain constant, usually fluctuating from year to year. It is my belief that after the war the larger percentage of our work will be new construction, and the smaller, repair and maintenance—or just about the reverse of today's figures."

The Miller company does not always confine its operations to well work. In 1942 the company drilled between 300 and 400 blast holes for the Ottawa Silica Sand Company, Ottawa, Illinois. They have, on occasion, drilled sounding and piling holes, too.

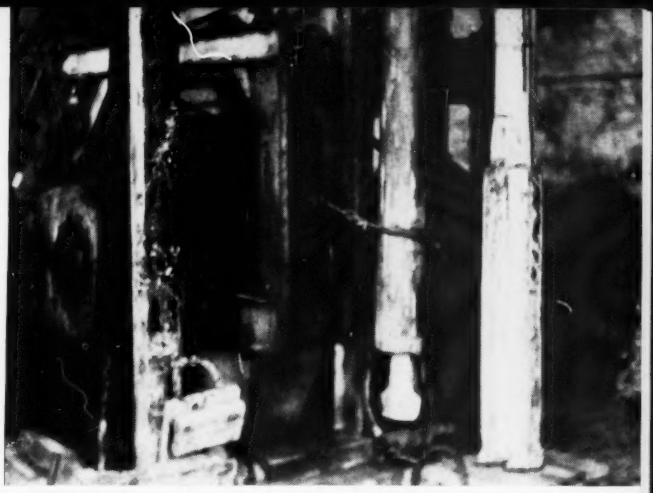
A knowledge of the rock formations in which they work is one of the company's prides, and this knowledge has been enhanced by cooperation with Dr. Carl Bays of the Illinois Geological Survey in making geophysical logs of deep wells in the Chicago area. The Survey was able to get logs of municipal wells in Northeastern Illinois, outside the Chicago region, but could not depend on such wells for information near Chicago because of their scarcity. The Miller company, with a record of many deep wells drilled for Chicago industries, was in an ideal spot to help with the Survey, and its help was gladly given. Securing the permission of several large industries, the Miller firm invited Dr. Bays to bring in his equipment and log the wells—thus completing the survey.*

Learn Geophysical Methods

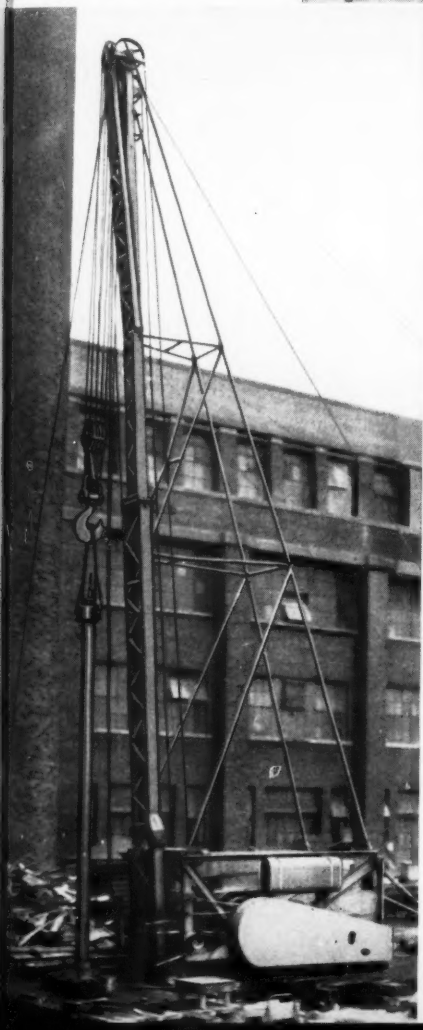
McEllhiney believes that postwar drilling will see a much greater emphasis on this type of well logging, and that's one reason why he's glad to have his company get a head start in learning geophysical methods.

The water bearing aquifers in the Miller territory are chiefly the following: limestone, notably the Niagra formation, is found at or near the surface, often outcropping in the Chicago area; St. Peter sandstone is found at a depth of around 800 feet near Chicago, although it outcrops around Ottawa and Dixon; the lower sandstone formations are

*An article based on this Survey will be published in a forthcoming issue of THE DRILLER.



• Miller drillers moved their rig indoors to service a well for the Lewis Tar Products Company of Brookfield.



• A big company, the J. P. Miller firm uses big rigs. This Bucyrus-Erie 36-L, ordinarily an oil field machine, services a deep well for the Bunte Candy Co. in Chicago.

the Potsdam and Galesville, and in these many of the Miller wells are finished.

A firm that drills as many wells as this one, runs into plenty of tough problems. "We manage to whip most of them," McEllhiney comments, "but I can remember one that we didn't lick." It occurred while the Miller drillers were trying to float in a 12-inch liner, 350 feet long, and land it at 1600 feet in a 15-inch hole; the liner collapsed and had to be fished out. Failure properly to calculate the collapsing strength of the liner was determined as the probable cause of the trouble. A table of collapsing pressures for steel was used, whereas the liner being put in was of wrought iron rather than steel. The problem occurred in the course of putting in the 2300-foot well for the City of Batavia. This well had a 24-inch diameter at the top, and a 12-inch diameter at the bottom. Under test, it pumped 1500 gpm.

Another Miller problem which almost defied solution was a well in which three different strings of tools were lost. Drilling in a very bad caving formation, the drillers attempted to pull out pipe when loose material caved in around the jars, making it impossible to pull the

(Continued on page 16)

Halting Tooth Decay—with *Water*

By
RAYMOND J. FAUST, C.E.
Assistant Engineer,
Michigan Department of Health

The relation between drilling water wells and public health is fairly obvious, but probably few drillers realize that water of a certain type seems to halt tooth decay. Obtaining such water by drilling is pretty much a matter of chance, but there appear to be some possibilities for treating water to get the desired effect.

VERY few of us are fortunate enough to go through life without experiencing quite a few cavities in our baby and adult teeth, and all of us, being human, are a little fearful of visiting the dentist to have cavities filled. It would be welcome news, therefore, if someone would tell us that cavities (dental decay) may be at least fifty per cent eliminated by the simple act of adding a small amount of chemical to your drinking water supply.

It does sound fantastic and may be a little hard to believe, but let's consider the facts and learn what this is all about. About 1908 in the southwest part of the United States the local dentists noticed that many, and in some towns, all of the native population had poorly developed tooth enamel. Further study of the problem showed that people living in neighboring towns, sometimes only a few miles away, had no such trouble. It was also discovered that adult persons moving to towns where the malady was common would not be affected, but their children would be.

It was agreed by those studying the problem that some common medium was the probable cause of the poorly formed enamel. Food and milk supplies were eliminated as a cause, leaving an accusing finger pointing at the public water supply. Routine chemical tests of water samples from the public supplies showed no unusual differentiations between the places where tooth enamel was natural and where it was not. Years passed with little progress made toward the solution of the problem. Then in 1931, almost out of a clear sky, the chief chemist of a large manufacturing company that owned mining properties in the southwest had a complete mineral analysis made of the deep well water supply at one of their mining locations. He found that fluorine, in relatively small amounts, was present in the water.

This fact was made known to the dentists studying the problem. Soon all the water supplies of the neighboring towns were examined for fluorine and it was quickly established that the people using water containing fluorine in excess of 1.5 to 2.0 parts per million (13 to 17 pounds per million gallons of water) had deformed tooth enamel, while the people using water containing smaller amounts had natural tooth enamel. It was further discovered that fluorine deteriorated the tooth enamel only during the period of enamel development, that is up until a child was eight years old. After the enamel was formed,

fluorine had no effect on it. That explained why people who were born and raised in a community where the water supply contained excess fluorides had deformed enamel (called mottled enamel) while the enamel of adults who moved into the area was not affected.

Many people were soon studying this phenomenon and it was not long before they discovered that teeth with mottled enamel were seldom decayed. In fact, in some areas where all the water supplies contained excess-fluorides, dental decay was practically absent. Dentists of the United States Public Health Service, in surveying the teeth of school children living in various towns throughout the country, were able to show that smaller amounts of fluorine in the drinking water would not produce mottling but would reduce dental decay *as much as fifty per cent*. This was reported in 1941.

Safe Amount

It has since been established that the safe or optimum amount of fluorides in a water supply is about 1 part per million or 8.3 pounds per million gallons of water. Fluorine in excess of 1 part per million may or will cause mottling while 1 part per million or less of fluorine will not. Fluorine in excess of the optimum amount should, therefore, not be tolerated. By preventing mottling some of the obtainable reduction of dental decay is sacrificed. This is, however, a sound choice.

Fluorides are found in many water supplies, especially in those from deep rock formations. Water from the Great Lakes contains a small amount of fluorides (0.1 p.p.m. or less), and water from wells in the drift often contains small amounts. As many as fifty per cent of the public water supplies in Michigan contain some fluorides, but very few have amounts greater than the optimum of 1 p.p.m.

One step still remains to be taken before the case of fluorine can be completely established: That step is to apply fluorides (sodium fluoride) to a fluorine-deficient public water supply to see whether equally good reductions in dental decay can be obtained from treated water as from water that contains fluorine. Plans to make such a test are now progressing, and when the test is undertaken the progress reports will be watched with much interest.

Cost of Treatment Small

Should this final test prove satisfactory, and there is little reason to doubt that it will, we can readily foretell that the treatment of water supplies with fluorine will become very popular. The cost of treatment is very small, approximately 7½ cents per person per year, or 30 cents for a family of four. These figures are based on the treatment of a small public water supply with an average daily production of 1,000,000 gallons of water (700 gallons per minute).

How does fluorine reduce dental decay? No one nows exactly, although two theories are advanced to explain the results, both of which may be equally important. First, it has been established that the tooth enamel of people using a fluorine bearing water contains more fluorine than the enamel of persons not having access to such a supply. It is thought that the additional fluorine in the enamel might cause it to be more resistant to decay.

Second, it has been established that the number of bacteria of a certain type (L. Acidophilus) found in the mouths of persons using

(Continued on page 15)

The DRILLER

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Vol. 18 February, 1944 No. 2

Survey Reveals Data on Drilling Machines

APPROXIMATELY one-third of all active well drilling machines in the U. S. are more than 13 years old, according to a survey of construction machinery conducted by the War Production Board from January through March of 1943.

The survey reveals that 35 percent of well drills were obtained before 1930; 31 percent were new between 1930 and 1937, and 34 percent in the 1938-42 period. These figures were obtained by WPB from the registration of construction machinery under Limitation Order L-196. Drillers will recall that prior to a revision in July, 1943, well drills were included in the "construction machinery" classification.

Only 389 drilling machines were registered with WPB when the survey was made. The fact that registration was required for at least three months after the conclusion of the survey indicates that the total number of such machines active in the United States at the present time is probably much greater than 389. This likelihood is increased by the fact that undoubtedly many machines had not been registered when the revision of L-196, exempting drilling rigs from registration, went into effect on July 26, 1943.

The percentages for age groups are probably fairly reliable, however, because of the fact that the total of 389 undoubtedly represents a fair sample of all active drilling machines.

Credit . . .

CREDIT was unintentionally omitted in the January issue for the cover photograph and for pictures used to illustrate the story (p. 6 and 7) entitled "Water for Britain's Desert Army." These pictures were British Official Photographs. We apologize for this omission.—The Editors.

Add Second Star

THE second Army-Navy "E" White Star has been awarded to the employees of Independent Pneumatic Tool Co., of Aurora, Illinois, and Chicago, manufacturers of Thor portable pneumatic and electric tools, it was announced by the Navy Department recently.

The second White Star was voted to Thor employees by the Navy Board for Production Awards.

NOW You can

TURN ON THE "SALES FAUCET"

More Deming Pumps and Water Systems Ready for Farmers

"O. K. to produce more Deming Pumps and Water Systems for farms," was the gist of a government order as applied to the Deming line.

It takes FOOD as well as planes, ships, tanks, guns, and ammunition to win this war. And it takes more Deming Pumps and Water Systems to help raise more FOOD.

So *turn on the sales faucet*... SELL DEMING PUMPS AND WATER SYSTEMS TO YOUR FARM CUSTOMERS!

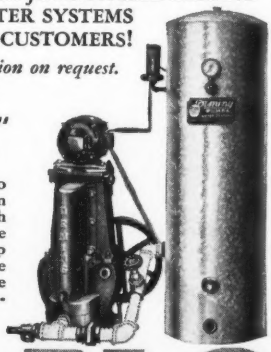
Complete information on request.

DEMING JET PUMPS
For Deep Wells

Capacities from 200 to 4500 G.P.H. Single pipe and two-pipe systems. Automatic regulator on every pump. Shaft with true aligning compression type coupling. Many other exclusive features.

DEMING "OIL-RITE"
For Deep Wells

Capacities from 190 to 3635 G. P. H. Made in 6, 10, 14, and 18 inch strokes. Many exclusive features make this pump a leader of its class. The complete Deming line meets all requirements.



DEMING

THE COMPLETE LINE

PUMPS AND WATER SYSTEMS

The Deming Company · Salem, Ohio

NEWS OF THE MONTH

Minnesota Group Meets Feb. 16-17-18

THE outlook for materials, machinery and repair parts in the well drilling industry will be highlighted in the 1944 convention of the Minnesota Well Drillers' Association, according to word received from E. H. Renner, Secretary-Treasurer of the Association. The meeting will be held at the St. Paul Hotel, St. Paul, on February 16, 17 and 18.

The annual business meeting and election of officers will be held on Friday, February 18. Plans are also under way to conclude the convention with a banquet on that date.

There will be no exhibits, Renner reports, unless manufacturers make their own plans and reservations.

Illinois Meeting Set For Feb. 24-25

THE annual convention of the Illinois Water Well Drillers' Association will again be held at the Hotel Morrison in Chicago. This year's dates are February 24 and 25.

Details of the meeting have not as yet been released by the Association, but according to L. E. Workman, Service Secretary, an interesting program will be held.

Plans are under way to publish a special program issue of the ILLINOIS WELL DRILLER featuring special convention material. Manufacturers have again been invited to attend the meeting. The 1944 convention is the seventeenth for this association.

New Circular

"DESIGN and Operation of Small Irrigation Pumping Plants," is the title of a new circular issued by the United States Department of Agriculture, Division of Irrigation of the Soil Conservation Service. Prepared under a cooperative agreement with the Colorado Agricultural Experiment station, this 80-page circular gives detailed treatment to all phases of its subject. The booklet is illustrated with drawings and photographs.

A limited supply of free copies is available from the Division of Irrigation, Box 180, Berkeley, California, or from Colorado Experiment Station, Colorado State College, Fort Collins, Colorado. When this supply is exhausted, it will be necessary to write to the Superintendent of Documents, Washington, D. C., for copies. The price is 15c. Ask for circular number 678.

Good Outlook for Water Systems

BECAUSE of the consistent improvement in the raw material situation recently, farm pumps and water systems are being produced in steadily increasing quantities and the flow of units to dealers is being increased monthly.

This was the optimistic report on the domestic and farm water supply situation made at two meetings of representatives of manufacturers of electric farm water systems, pumps, wind mills, and allied products at

the Sherman Hotel, Chicago, December 8 and 9.

So definite has been the improvement in the output of water systems that there is every indication that the backlog of orders now on manufacturers' books will be entirely absorbed by July 1, 1944, it was predicted at the meeting.

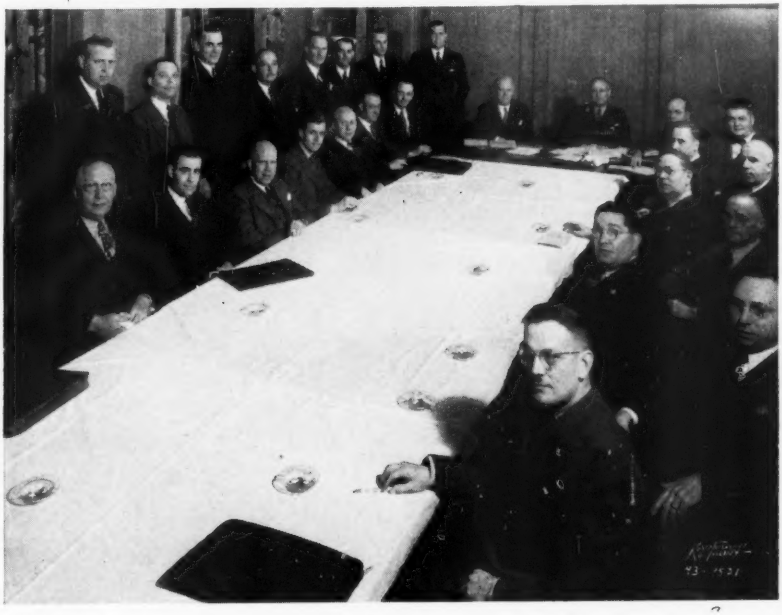
The difficulties now being encountered by the manufacturers are chiefly in connection with obtaining fractional horsepower motors, switches, and bearings in adequate quantities. Another problem is that presented by the draining off of skilled personnel by the armed services.

These problems, however, are being solved with the assistance of the WPB and the OCR both of which recognize the importance of running water in the nation's food production program. It was reported that OCR contemplates adding water systems to the list of "essential welfare items."

Water systems are now being manufactured under order L-257 which permits manufacturers to make 67 per cent of their 1941 production. This is exclusive of parts made for repairs and replacements.

The postwar plans of the water system industry call for the production of at least 500,000 electric water systems in the first year after Victory. Industry representatives at the meetings gave assurances that there is no question about the ability of their respective companies to meet their goals and to serve the postwar market adequately with well-known, high quality, low cost, dependable water supply equipment.

• Running water in every home is the goal of manufacturers of water supply equipment who discussed postwar plans at a meeting in Chicago on December 9.



FROM THE MAILBAG

This page is open to any of our readers having questions to ask relating to drilling, driving pipe, dressing bits, etc. All letters will be answered promptly by experienced drillers and engineers who are qualified to give intelligent advice on these subjects. We will publish as many letters of general interest as space will permit. Address: The Driller, South Milwaukee, Wis.

Sirs:

With reference to your Answer Page 16, October issue of the Driller, in regard to the desirability of hard surfacing drill bits, we would like to state that we have been hard surfacing bits for 5 or 6 years and we consider it very satisfactory.

We do not remove the bit from the stem as it only takes us from 5 to 7 minutes to hard surface an ordinary 5 or 6" bit. It will usually take as long to change bits. If we are drilling a number of wells of the same size we do not take the bit off until we change to larger or smaller size. We have no trouble with cracking or spalling and we are able to keep the bit in proper shape by building up where needed. The advantages are as follows:

We do not have to carry circle-wrenches and jacks, and as the bit never gets but slightly under gauge we do not use jars. The bit lasts longer as metal is added as fast as it wears. As we very seldom forge dress bits the water courses are always clean. We have formations in Ohio and Pennsylvania as abrasive as found in any part of the U. S. We also have formations which will compare in hardness with andesite or trap rock. We have tried many kinds of rods and have settled on Stoody Self Hardening for the harder and most abrasive formations, and Vanadium Self Hardening for the softer strata. We do not under any circumstances use an underlayer of low carbon steel. We have tried electric welding but we find that either Stoody or Vanadium applied with an oxy-acetylene torch much more practical. We would advise a fairly large soft flame. We have taught our helpers to apply it without trouble and do not think that any driller will have much trouble although some experience will be necessary.

When drilling in hard material and when the temper is likely to be drawn from the stock below the hard surfacing, we chill by holding in a bucket of water immediately after either side has been hard surfaced. However, we find that this is not necessary except in very hard formations.

We have drilled 8 and 10" wells 4 to 5 hundred feet in depth without once removing the bit from the stem.

In conclusion, we certainly do think it desirable and would hate to think of going back to forge dressing.

J. C. E.

Ohio.

THE DRILLER is happy to have your comments on the subject and is glad to hear of your success with hard surfacing of drill bits. Your thorough understanding of the process and careful execution are probably responsible for an appreciable degree of your success.

Editor's Note: The editors will welcome hearing from other drillers their opinions on hard surfacing, too.

Army Develops New Test Kit

A TESTING KIT that makes simple and sure the Army's testing of its chlorinated water supplies has been developed by Major Lloyd K. Clark, Sanitary Corps, Office of the Surgeon General. For his work Major Clark received a citation of commendation from the Surgeon General, Major General Norman T. Kirk.

The Army uses calcium hypochlorite to purify water for drinking and cooking purposes. The new testing kit, used to determine the calcium hypochlorite content, is small and compact and is easily operated.

The new device consists of two plastic vials: One is used for testing

and has a one-inch yellow band around it; the other contains orthotolidine tablets.

The test vial is filled with a sample of water to which calcium hypochlorite has been added. Orthotolidine is dropped into the water which turns various shades of yellow, depending upon the chlorine content.

If the water turns a ligher yellow than the yellow band, more calcium hypochlorite must be added. If an orange shade is obtained, the water is over-chlorinated and should be diluted. If it turns a yellow equal to the color of the band or a yellow darker, the water is satisfactory. Thirty minutes should elapse before the water is used.

Tooth Decay . . .

(Continued from page 9)

fluorine-bearing water are reduced materially below the numbers found in the mouths of people using fluorine-deficient water. This bacterial reduction is due to the fact that fluorine, like the other halogens—chlorine, bromine and iodine—is a disinfectant.

You may well ask, "What has the reduction of L. Acidophilus to do with dental decay?" This particular bacteria likes sugar and, in consuming a small tidbit lodged between the teeth, produces an acid which attacks and breaks down the tooth enamel, thus causing a cavity. By retarding the development of these bacteria in the mouth, a reduction of the possibilities of decay is also obtained.

For the first time, it looks as though we have available the knowledge to substantially correct a serious public health problem—dental decay—and drillers and water works men may well play a large part in attaining that goal.

New Monitor windmills are on the way! Baker Manufacturing Company is standing by its dealers in their drive to keep farm wells pumping.

Replacement parts will continue to be furnished for repairing old windmills where possible. In addition to that — Monitor has been authorized to manufacture a substantial number of new windmills during the coming year.

If a farmer's need is genuine and he qualifies for ration certificate MR-22, he may be able to obtain a new windmill.

This is not a stripped wartime model, but the regular Monitor "storm-safe" mill with automatic wind-governing, self-oiling head and iron-vault gear case. Get the full facts from your nearest Baker branch.

Monitor
SKY POWER WINDMILLS

WINDMILLS
PUMPS
PUMPJACKS
WELL SUPPLIES

• BRANCHES •
BAKER MFG. CO.: Minneapolis, Minn.; Madison, Wis.; Fort Dodge, Ia.; Cedar Rapids, Ia.; Omaha, Neb.; Kansas City, Mo.; Enid, Okla.; Hutchinson, Kansas
BAKER MFG. LTD. Winnipeg, Canada
AXTELL CO.: Fort Worth, Tex.; Amarillo, Tex.; Lubbock, Tex.; San Angelo, Tex.

BAKER MANUFACTURING CO., EVANSVILLE, WIS.

Chicago Firm . . .

(Continued from page 7)

pipe. With the tools stuck, the drillers immediately severed the cable and went down with a second string and a slip socket. This time the jars locked, and a bumper was run down in an attempt to loosen them—but without success. Now, instead of one string being stuck, there were two. It was decided that the best thing to do was to proceed as before: cut the cable and run down a third string with another slip socket. But again they encountered trouble as the jars broke, bringing the total of stuck tool strings to three. Things looked really black at this point—and still the one logical thing to do appeared to be running down a fourth string in the hope of pulling out at least some of the tools. So the cable on the third string was cut, a fourth was lowered, again with a slip socket, and this time their efforts were greeted with success. All four strings, plus two lengths of pipe were pulled. The four tool strings totalled 105 feet in length! The machine which did this gigantic lifting job was a Bucyrus-Erie 24-L. The well was a 17-inch municipal well for the City of Elmhurst, put down in 1941.

There have been plenty of unusual Miller jobs. Among them was one which involved making a sounding survey to determine the cause for the settling of a large factory building; another was the drilling of a concreting hole in the bottom of the Waterway Canal; a third was a dry well used in connection with a factory air-conditioning system.

Consistent Success

While they've had their share of tough problems and exceptional jobs to tackle, the J. P. Miller company has consistently enjoyed outstanding success — something of which President McEllhiney and other officials are justly proud.

"Whatever success the present company has enjoyed," the genial "Mac" remarks, "is due almost entirely to our engineering knowledge. Our technical training permits us to talk intelligently to engineers, with whom we must do most of our negotiating, and with whom many others 'can't get their foot in the door.'" Both President McEllhiney and Vice-President M. O. Nelson are graduate engineers—the former of Purdue University and the latter of Armour Institute.

Also high in the list of success factors is a strict policy of not over-

(Continued on page 20)

• Ready to go out on a job, this Bucyrus-Erie 29-W was photographed in the Miller Company's yard at Brookfield.

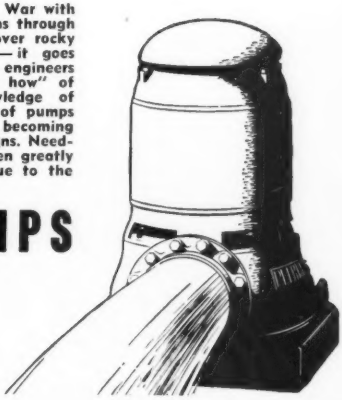
The Vicious Land and Sea Fighter

—The Amphibious

WATER BUFFALO

Designed by the Engineers of **PEERLESS PUMPS**

America's newest fighting fortress has gone to War with a vengeance. It's the Water Buffalo. It swims through sea and surf, it crawls over beachheads, up over rocky terrain, trundles through mud and swamps — it goes everywhere, loaded with devastation. Peerless engineers designed this deadly attacker. Their "know how" of engineering hydraulics, their everyday knowledge of water problems and their detailed knowledge of pumps were largely responsible for Peerless engineers becoming the world's authority on amphibian tractor designs. Needless to say, Peerless engineering forces have been greatly strengthened and have knowledge of real value to the pump industry.



PEERLESS PUMPS

— FIRST ON THE WATER-FRONT

PEERLESS PUMP DIVISION
Food Machinery Corporation
Factories:
301 W. Ave. 26, Los Angeles 31, Calif.
Canton 6, Ohio
San Jose 5 and Fresno 16, Calif.

WIT BITS

"That's a nice umbrella you've got."

"Yes, but it's not really mine. I was walking home in the pouring rain and saw a young man going my way with an umbrella. I thought I would ask if he would let me share it with him, so I went up and said, 'Where are you going with that umbrella?' And he threw it down and ran off as fast as he could!"

Recruit: "How far is it from here to the army camp?"

Native: "About 5 miles as the crow flies."

Recruit: "How far is it if the crow has to walk and carry a rifle?"

Their cars having collided, Jock and Pat were surveying the situation. Jock offered Pat a drink from his bottle. Pat drank and Jock returned the bottle to his pocket.

"Thank ye," said Pat, "but aren't ye going to have a bit of a nip yourself?"

"Aye," replied Jock, "but not until the police have been here."

"You sold me a car two weeks ago."

"Yes, sir."

"Tell me again all you told me about it then. I'm getting discouraged."

"What has twenty-four feet, green eyes and a pink body with purple stripes around it?"

"I don't know—what?"

"I don't know either, but you better pick it off your neck!"

There once was a driller named
Morning
Who refused to heed any warning,
He drove on the track
Without looking back
And they're mourning this morning
for Morning.

"Are you doing anything for your hay fever?"

"Sure! I sneeze whenever it wants me to."

The bridegroom, who was in a horribly nervous condition, appealed to the clergyman in a loud whisper, at the close of the ceremony:

"Is it kisstomary to cuss the bride?"

The clergyman replied:

"Not yet, son."

"Grandmother, can you help me with this problem?"

"I could, dear, but I don't think it would be right."

"Maybe it wouldn't, but take a crack at it anyway."

NEW MOTHER HUBBARD

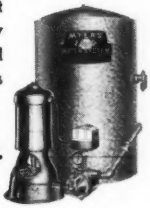
She went to the butcher's
For spareribs and suet,
But found that some others
Had beaten her tuet.
She said she would settle
For sausage or liver,
The butcher insisted
He had none to giver,
She pleaded for pork chops . . .
For meatballs . . . for mutton
The butcher said: "Lady,
I just ain't got nutton!"

"FINISH THAT GOOD DRILLING JOB WITH THE BEST PUMP"

says Pennsylvania Driller

"A good well deserves a good pump," says a Pennsylvania Driller. "When I install a Myers pump or water system, I know it will operate dependably and be a credit to my drilling job. Myers equipment has helped me build up my business and my reputation for drilling good wells."

Remember — the wells you drill are often judged by the performance of the pumps installed. When you sell or recommend a pump, see that it's a reliable lifetime Myers. Depend on this famous pumping equipment to serve your customers better and protect your reputation as a good driller. Plan now for the many drilling jobs that postwar will bring you. Write us for new folder on Myers Pumps and Water Systems.



THE F. E. MYERS & BRO. CO.

231 Church St., Ashland, Ohio

19WS4

PUMPS • WATER SYSTEMS
SPRAYERS
HAY UNLOADING TOOLS

Carry Tools Higher ...with Macwhyte "Hi-Lastic"

For profitable shallow drilling, use Macwhyte "Hi-Lastic." You can carry tools higher, make a longer stroke. No manila cracker required. Internally lubricated.

For deep well drilling, try Macwhyte Standard Cable-Tool Lines. Just the right elasticity to strike long, hard, sharp blows.

For fast bailing, use Macwhyte Sand Lines. In coarse laid (6 x 7) or soft laid (6 x 19), mild plow steel.

ARMY E NAVY

Get the CORRECT line for your equipment from NO. 708

MACWHYTE COMPANY

2939 Fourteenth Avenue, Kenosha, Wisconsin

Chicago Firm . . .

(Continued from page 16)

loading machinery. They much prefer to use rigs of larger capacity than necessary instead of machines too light for the work. They've found that customers like to see them bring in rigs whose very appearance inspires confidence that the job will be done quickly and well.

Another "policy-that-pays" is the practice of keeping on hand enough fishing and drilling tools to handle any kind of work they encounter. This cuts delays, saving time which otherwise would be spent in trying to borrow or purchase needed tools. All tools receive expert care. Bits are dressed with a steam ram, and tool joints are set up in oil kept meticulously clean. The oil used is S.A.E. 10 or lighter, and it is kept in containers sealed against dirt. This policy has rewarded the company by practically eliminating joint trouble.

Have Advertising Program

The larger percentage of the company's advertising is confined to classified directories. Miller advertisements also run in publications covering the municipal field, notably the "Municipal League Magazine." In addition, the firm carries on a direct-letter advertising program, which is followed up by personal solicitations.

Progressive methods, such a prominent facet of the present company's policy, have also been an outstanding feature in the company's history —which dates to 1868. At that time the founder, J. P. Miller, came to Chicago after having learned drilling in Pennsylvania whence he had moved from his native Nova Scotia. His first mid-western well was at De Kalb, Illinois, and his first Chicago well was drilled in 1871. Miller

was the first Chicago driller to concentrate on deep wells, for which he soon established a wide reputation.

Numerous city wells and even whole water works installations were constructed by this company during its founder's lifetime. Installations at Charleston, South Carolina; Galveston, Texas; Hammond, Indiana, and Two Rivers, Wisconsin, are just a few of these.

Company Changes Hands

In 1937 a complete stock transfer occurred, with the present company obtaining control. Present executives assumed their positions at that time, and one of the first things they did was to add new, up-to-the-minute equipment. They obtained several big Bucyrus-Erie oil well spudders (36-L and 24-L) which they found well suited to their deep well work.

The one thing that impressed President McEllhiney the most about his venture into water well drilling at that time was what he termed "the apparent lack of willingness on the part of customers to trust the contractor to do the right thing. Perhaps because of the fact that most of the driller's work is under the ground surface, customers seemed extremely distrustful. I think, however, that we have overcome this to a great extent, in support of which is the fact that at the present time a good half of our business is on an hourly rather than a foot basis. And this trend is continuing, too. An ever-increasing proportion of our work—even in drilling new wells—is now on an hourly basis."

And so the J. P. Miller Artesian Well Company continues, writing a story of success that promises to dwarf anything in the firm's 75 years of existence.

FREE TO DRILLERS

Every water well driller in the United States and Old Mexico should have a copy of our Bulletin No. 26.

It gives you complete information on JENSEN Water Well Pumping Units—the best assurance on earth that your customers will be satisfied with the good wells you drill—that water from those wells will be CHEAP and DEPENDABLE.

Write NOW for your free copy. Specify Bulletin No. 26.

JENSEN BROS. MFG. CO.

14th and Pacific Streets, COFFEYVILLE, KANSAS, U. S. A.

EXPORT OFFICE: 50 CHURCH ST., NEW YORK CITY, NEW YORK

BARGAIN COUNTER

To the reader who wishes to advertise used equipment in "Bargain Counter" Section. All advertising in this section is payable in advance. Enclose your check or money order with copy. Rate: 30c per line. Minimum charge $1.20. No discounts; no commissions. Read these instructions carefully. The average line contains 28 characters (20 characters if all capital letters are used). Count spaces and punctuation as one character each. Allow 10 characters for box number if blind advertisement is desired. Count your own copy to save delay. Holding up your advertisement one month to secure approval of revised copy or an additional remittance, may cost you real money in a lost sale. Be sure to enclose the correct amount of money with your order. Closing date—10th of preceding month. Example—January issue closes December 10th.

To the reader wishing to answer "Bargain Counter" Section advertisements appearing on these pages: Be sure to address your inquiry to the advertiser by using the correct box number. Mail your letter in care of THE DRILLER, South Milwaukee, Wisconsin. Write each advertiser a separate letter. Do not write us for name and address of advertiser. This information will not be given out. We have no information about the equipment advertised other than that shown in the advertisements themselves.

DRILLS

71 Speed Star mtd. on 1939, 2-ton Intern'l truck. Complete outfit with exception of jars, stem and bits. Purchased new 1941. Drilled 15 wells. Good as new. Owner being drafted. Attractive cash price. J. H. Nolan, R.F.D. No. 4, Spartanburg, S. C.

WISCONSIN. Bucyrus - Erie 21-W truck mounted and Bucyrus - Armstrong 35 - W mounted on rubber tired trailer. Both machines in excellent condition. Located near Milwaukee. Box 0382

NEW YORK. Keystone 1½ drill, wood frame, derrick with Bucyrus-Erie shock absorber head. LeRoi four cylinder engine. Machine in good shape. No truck or tools. Price $800. Box 0354

WISCONSIN—All steel spudder, capacity for drilling to **2000', handles 3000 lbs. of tools.** Continental six cylinder gasoline engine, reverse gears. Derrick 45' high with Bucyrus-**Erie rubber shock absorber.** Bucyrus-Erie 29-W bull reel, jack shaft, clutches, etc. Catheads and device for handling ram. This machine is in excellent condition and must be seen to be appreciated. Mounted on four wheels, solid tired **trailer. Bargain at $2000.00** for someone who wants to drill deep water wells or for shallow oil production. Box 3310

MISC.

FOR SALE

Turbine pump, 300 GPM, 300 ft. setting for 8" hole, 14 stage bowls, water lubricated. 40 HP hollow shaft motor, 3/60/220/440 volt, 1750 RPM. Pump used only 30 days. Starting equipment and switches included. Pump in southern Wisconsin. Box 0551

PIPE

80,000 ft. Used 6" Line
10,000 ft. Used 8" Line
Plain end and T & C.
U & I SUPPLY CO.
P. O. Box 409, Jackson, Mich.

WANTED

Water well drillers for 4" work. Permanent. $1.25 hourly to start, with frequent raises and full week's work. Also several tool-dressers wanted, 85c hour to start. Lower Michigan. Box 0402

Southern California driller wants Bucyrus-Erie 29-W, 29-L or late Armstrong-35 drill. Forward all particulars. Box 0392

WANTED TO BUY

One 29-W well drill or its equivalent. Give complete description, location, and price. Gust Nelson & Sons, Rochester, Minn.

Let's All BACK THE ATTACK

★ BUY EXTRA WAR BONDS ★

During THE 4th WAR LOAN

HINTS *for preventing* DRILLING ILLS

Besides such important "musts" as regular lubrication, proper clutch and brake adjustment, careful setting-up, etc., there are numerous other details to watch in order to keep your drilling troubles at a minimum. Here are a few:

1. Watch for bad spots in drilling line, calf line, sand line.

2. Maintain gauge on drill bits — off-gauge bits can bring plenty of fishing trouble.

3. Watch for bright spots on bull reel drum and sheaves — they call for immediate lubrication.

4. Keep accurate measurements of drilling tools. It's easier to fish when you know the measurements of the tools in the hole.

5. Know in advance what fishing tools can be used in the size of hole being drilled.

6. Keep box and pin shoulders of tools in condition.

BUCYRUS · ERIE CO·

South Milwaukee, Wis., Englewood, N. J.
Evansville, Ind.
J. E. Armstrong Sales Company, Waterloo, Iowa

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A journal for water well drillers

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